# Physical Security

**SNL Biosecurity Team**

**National Workshop on Biosecurity**

**Kuala Lumpur, Malaysia**

**2 June 2005**

# Elements of a
# Physical Security System

- **Graded protection**
- **Access control**
- **Intrusion detection**
- **Response force**

Sandia National Laboratories

# Graded Protection: Concentric Layers of Security

- **Property Protection Areas**
  - **Low risk assets**
    - Grounds
    - Public access offices
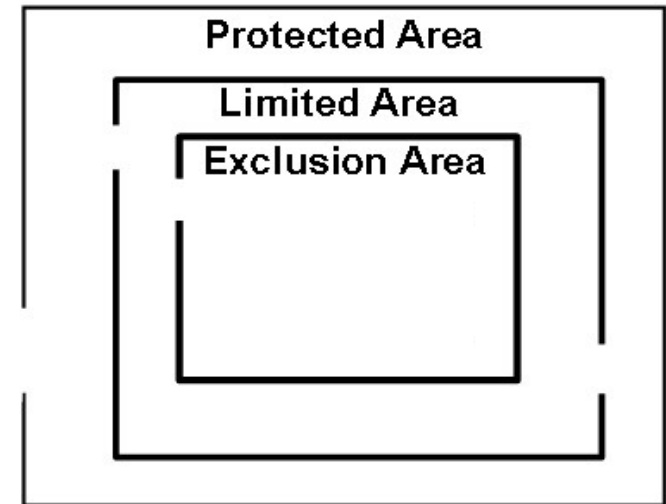    - Warehouses

- **Limited Areas**
  - **Moderate risk assets**
    - Laboratories
    - Sensitive or administration offices
    - Hallways surrounding Exclusion Areas

- **Exclusion Areas**
  - **High risk assets**
    - High containment laboratories
    - Computer network hubs

Protected Area
Limited Area
Exclusion Area

Sandia National Laboratories

# Property Protection Control

- **Fences**
  - **Mark the boundaries of your property**
  - **Announce your intention to protect the property**
  - **Elicit strong statement of intent from intruder**
  - **Terrain features can also serve this purpose**

Sandia National Laboratories

# Limited and Exclusion Area Access Control

- **Access control ensures that only authorized individuals are allowed into certain areas**
    - **Increasingly strict controls as you move toward assets of highest consequence**
    - **Unique credential:  Grants access to specific areas by specific personnel**

- **Limited Areas**
    - **Requires unique credential for access**
        - **Electronic key card, or**
        - **Controlled key**

- **Exclusion Areas**
    - **Requires unique credential <u>and</u> unique knowledge for access**
        - **Electronic key card <u>and</u> keypad or biometric device, or**
        - **Controlled key <u>and</u> second individual to verify identity**

Sandia National Laboratories
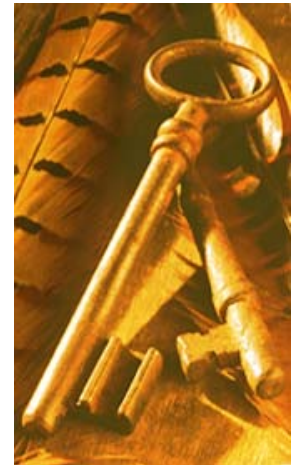
# Intrusion Detection and Response

- **Security violation detection**
  - **Guards**
  - **Electronic sensors**

- **Alarm assessment**
  - **Validation of violation before response**
  - **Can be direct (guards) or remote (video)**

- **On-site guard force response**
  - **Supports electronic systems**
  - **Patrols or guards perimeter and buildings**
  - **Summons and directs local law enforcement**

- **Local law enforcement (police) support**
  - **Reinforces or substitutes for on-site guard force**
  - **Memorandum of understanding**

Sandia National Laboratories

# Physical Security Procedures

- **Impose consequences for security violations**
- **Log personnel (including visitor) access to restricted areas including entry and exit times**
- **Establish controls on animal and supply handling**
- **Enforce escort policies**
  - **Visitors**
  - **Maintenance and cleaning personnel**
  - **Delivery personnel**
- **Train personnel on what to do about:**
  - **Unrecognized persons**
  - **Unusual or suspicious activity**

Sandia National Laboratories

# Performance Testing and Maintenance

- **Create security performance test plan and procedures**
- **Schedule periodic testing of hardware**
- **Schedule periodic testing of response force procedures**
- **Document test results**
- **Take corrective action**
  - **Schedule maintenance and repair of hardware**
  - **Corrective training and exercises for guard force**

Sandia National Laboratories

# Summary

- **Physical security may be implemented by electronic and/or mechanical means**
    - **Either must be augmented by people and procedures**

- **Physical security depends on a fully integrated system**
    - **Physical security elements**
    - **Management practices**

Sandia National Laboratories